CLAIMS

What is claimed is:

1   1.   A method of actively auditing a software system to determine status, the software system

2   comprising a plurality of processes executed in an active processor domain, the method

3   comprising the steps of:

4   generating an active message for processing by the active processor domain;

5   generating a modified active message by providing an active time indicator associated

6   with the active message for at least one process of the plurality of processes; and

7   determining the status of the active processor domain in response to the modified active

8   message.

1   2.   The method of claim 1 wherein the step of determining the status of the active processor

2   domain is responsive to the active time indicator.

1   3.   The method of claim 1 wherein a respective active time indicator is associated with each

2   process of the plurality of processes, and wherein the step of determining the status of the active

3   processor domain is responsive to more than one of the active time indicators.

1   4.   The method of claim 1 wherein the active time indicator comprises a time-stamp

2   indicating the time the at least one process completed processing the active message.

1   5.   The method of claim 1 wherein the active time indicator comprises a time-stamp

2   indicating the time elapsed while the at least one process processed the active message.

1   6.   The method of claim 1 wherein the step of determining the status comprises;

2   determining a statistical characteristic of the active processor domain; and

3   determining the status of the active processor domain in response to the statistical

4   characteristic.

1   7.   The method of claim 6 wherein the step of determining a statistical characteristic

2   comprises generating a time average of the duration of the at least one process of the plurality of

3   processes for a plurality of active messages.

1   8.   The method of claim 7 wherein the step of determining a statistical characteristic

2   comprises generating a standard deviation from the time average.

1   9.   The method of claim 1 further comprising the steps of:

2   generating a stand-by message for processing in a stand-by processor domain, the stand-

3   by processor domain comprising a plurality of stand-by processes; and

4   generating a modified stand-by message by providing a stand-by time indicator for at

5   least one process of the plurality of stand-by processes in the stand-by domain.

1   10.   The method of claim 9 wherein the step of determining the status of the stand-by

2   processor domain is responsive to the stand-by time indicator.

1   11.   The method of claim 9 wherein a respective stand-by time indicator is associated with

2   each process of the plurality of stand-by processes of the stand-by domain and wherein the step

3   of determining the status of the stand-by processor domain is responsive to at least two of the

4   stand-by time indicators.

1   12.   The method of claim 9 further comprises the step of transforming the active processor

2   domain to the stand-by processor domain in response to the modified active message.

1   13.   A system for actively auditing a software system to determine status comprising:

2   an active processor domain, the active processor domain having at least one processor, the at

3   least one processor executing at least one process, the at least one process receiving an active

4   message and generating a modified active message in response thereto;

5   a time-stamp mechanism in communication with the at least one process and for

6   providing an active time indicator for use in generation of the modified active message; and

7   a redundancy manager in communication with the active processor domain, the

8   redundancy manager determining the status of active processor domain in response to the

9   modified active message.

1   14.   The system of claim 13 wherein the redundancy manager determines the status of the

2   active processor domain in response to the active time indicator.

1   15.   The system of claim 13 wherein the active time indicator comprises a time-stamp

2   indicating the time the at least one process completed processing the active message.

1   16.   The system of claim 13 wherein the active time indicator comprises a time-stamp

2   indicating the time elapsed while the at least one process processed the active message.

1   17.   The system of claim 13 wherein the redundancy manager determines a statistical

2   characteristic of the active processor domain and determines the status of the active processor

3   domain in response to the statistical characteristic.

1   18.   The system of claim 17 wherein the statistical characteristic comprises a time average of

2   the duration of the at least one process.

1   19.   The system of claim 18 wherein the statistical characteristic comprises a standard

2   deviation from the time average.

1   20.   The system of claim 13 further comprising a stand-by processor domain, the stand-by

2   processor domain having at least one processor, the at least one processor executing at least one

3   stand-by process, the at least one stand-by process receiving a stand-by message and generating a

4   modified stand-by message in response thereto, and wherein the redundancy manager determines

5   the status of the stand-by processor domain in response to the modified stand-by message.

1   21.   The system of claim 20 wherein the redundancy manager further comprises a control

2   determination module, the control determination module transforming the active processor

3   domain into the stand-by processor domain in response to the modified active message.

1   22.   A system for actively auditing a software system to determine status comprising:

2   means for executing at least one process in an active processor domain configured to receive an

3   active message and generate a modified active message in response thereto;

4   means for time-stamping in communication with the at least one process, the means for

5   time-stamping generating an active time indicator for use by the means for executing; and

6   means for the status of the active processor domain in response to the modified active

7   message.